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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,707	07/15/2003	Hirokazu Shimizu	024536-0129	4911

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3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

MCCALL, ERIC SCOTT

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/618,707	Applicant(s) SHIMIZU, HIROKAZU	
	Examiner Eric S. McCall	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-19 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/15/03 & 12/18/03</u> . | 6) <input type="checkbox"/> Other: ____ |

CONTROL APPARATUS AND CONTROL METHOD OF ENGINE

FIRST OFFICE ACTION

CLAIMS

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukui (5,778,862).

With respect to claim 1, Fukui teaches a control apparatus of an engine, comprising:
a crank angle detector (10A) detecting a reference crank angle for each stroke phase difference between cylinders; and

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a control unit that receives a detection signal of said crank angle detector, updates a cylinder discrimination value (E) based on a previous cylinder discrimination value, and outputs a control signal for each cylinder based on said cylinder discrimination value (col. 7, lines 5-9),

wherein said control unit prohibits the outputting of said control signal for each cylinder based on said cylinder discrimination value, when said engine is rotated in reverse and also fuel is burned in said engine during said reverse rotation (col. 6, lines 47-56).

With respect to claim 2, Fukui suggests the claimed subject matter thereof (col. 6, lines 32-39 and 50-55).

With respect to claim 8, Fukui prohibits ignition control and fuel injection control (col. 6, lines 55/56) when reverse rotation occurs. Thus, Fukui would stop updating the cylinder discrimination value as claimed.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui (5,778,862).

With regards to claim 3, Fukui fails to teach a ratio as claimed.

However it would have been obvious to one having ordinary skill in the art armed with said teaching to detect the reverse rotation of an engine based on a ratio between the newest value and a previous value of the period as taught by Fukui.

The motivation being that Fukui compares new and previous values of the period to determine reverse rotation and since a ratio is another well known form of comparison, one having ordinary skill in the art would have knowledge to compare two values in such a way.

Allowable Subject Matter

Claims 4-7 (due to the fuel judging means) and 9 (due to the switching as claimed) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 10 has been found to be allowable over the prior art because the prior art fails to teach or suggest the burning detecting means for detecting whether or not fuel is burned during reverse rotation of the engine in combination with the control for each cylinder prohibiting means which takes into account the burning detecting means as claimed.

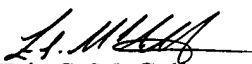
Claim 11 (and thus claims 12-19) has been found to be allowable over the prior art because the prior art fails to teach or suggest detecting the burning of fuel during reverse rotation of the engine in combination with the prohibiting the outputting of the control signal for each cylinder taking into account the fuel burning detecting step as claimed.

RELEVANT ART

The Applicant's attention is directed to the enclosed "PTO-892" form for the prior art made of record and not relied upon but considered pertinent to the state of the art of the Applicant's disclosure.

CONCLUSION

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (571) 272-2183.


Eric S. McCall
Primary Examiner
Art Unit 2855
Aug. 18, 2004